

II. Remarks

Claims 17-31 are pending in this case, the previously pending claims 1-12 having been canceled by a prior amendment, claims 13-16 having been canceled by this paper, and proposed new claims 22-31 added. The proposed claims are directed toward various embodiments of a hand-held device for gripping objects positioned beyond arm's length disclosed in the application as filed. Accordingly, no new matter is introduced by the proposed amendments.

A. Claims 17-21

Claims 17-21 stand rejected under 35 USC §103(a) as being unpatentable over Hsu (U.S. Patent No. 6,739,637) in light of Voellmer (U.S. Patent No. 5,178,431). In particular, the examiner argues that Voellmer "teaches a gripping portion (17) (Fig. 3) having a stem (26), a radially extending tabs [*sic*] (70) (Fig. 5) to be freely removable and an end effector (11) having a bore and a slot (73) (Fig. 6) to receive the gripping portion."

Pg. 4, Office Action of 20 April 2007.

During the telephone interview of 12 June 2007, the examiner noted that the applicant's arguments regarding the foregoing rejection seemed persuasive, and asked the applicant to submit these arguments in written form for further review.

As the applicant pointed out, claim 17 requires gripping portions which are freely removable from the jaws (last line of claim 17). Such removable gripping portions are not present in Voellmer. On the contrary, Voellmer discloses a robot with a pair of fingers 4 and 5 (also numbered 11 for an exemplary "single-V finger" and 27 for an exemplary "double-V finger"). In the example of the single-V finger of Voellmer, the fingers 11 have finger pads

12 and 13 and a groove 16.¹ The groove 16 mates with ridge 26 on handle 17 of an object to be moved.² In the double-V finger of Voellmer, the handle 72 is attached to the object to be moved.³ In neither case are these handles (17 or 72) actually gripping portions. The gripping portions of Voellmer, if any, are the groove 16 and possibly the finger pads 12 and 13. But these are fixed, not removable. Voellmer does not disclose removable gripping portions that are freely removable from jaws, as is required by claim 17.

The applicant wishes to point out that a *prima facie* case of obviousness requires a showing that the cited references collectively teach *all* elements of the claimed invention. *See MPEP §2143.03 (citing In re Royka 180 USPQ 580 (CCPA 1974)).* The applicant does not believe the examiner has met this burden in that neither of the references cited disclose removable gripping portions that are freely removable from jaws. Since the cited art does not disclose every element of the claimed invention, the applicant believes claim 17 is currently allowable as written. In view of the foregoing, the applicant also respectfully submits that the related rejection as to dependent claims 18-21 is rendered moot. However, the applicant further submits that the cited art fails to anticipate or render obvious the invention of these claims, and so reserves the right to make amendments and/or arguments in respect of these claims should the rejection be continued.

¹ The double-V finger has two grooves 28 and 29. Otherwise it operates the same as the single-V finger.

² The pertinent portion of the disclosure of Voellmer is Col. 3, lines 52-65, which states: “Referring first to FIGS. 2 and 3, the new design single-V finger 11 consists of finger pads 12 and 13 which interface with a handle 17 (FIG. 3) on the object to be moved (not shown), and a shank 6, which attaches finger 11 to the robot gripper in a standard manner. Finger pads 12 and 13 comprise a large V-shaped groove, machined into the face of finger 11, to cradle objects to be moved, such as cylinder 45 shown in FIG. 1. Single-V finger 11 also has one recessed groove 16, which is perpendicular to shank 6. Recessed groove 16 mates with ridge 26 on handle 17. In addition, finger pads 12 and 13 mate with handle pads 18 and 19; this is clearly shown in FIG. 3.” (*Emphasis added.*)

³ Col. 4, lines 9-10

B. Claims 22-31

The examiner rejected claims 13-15 under 35 USC §102(e) as being anticipated by Hsu (6,739,637), and claim 16 under 35 USC §103 as being unpatentably obvious over Hsu (6,739,637). During the interview of 12 June 2007, the examiner argued that these claims, as written, could not overcome the Hsu reference. Claim 13 as written required a pull member that was sufficiently resilient so as to permit the pair of jaws to be temporarily urged away from each other towards the unclamped position when the lock mechanism had been locked in place. From the rejection of 20 April 2007 and the examiner's statements during the interview of 12 June 2007, it appears that the examiner believes there is sufficient resiliency in the structure of Hsu to allow such movement of the jaw. In an effort to clarify for the examiner how he has misread the Hsu reference in these regards, and thus to point out the distinction between the applicant's invention and that prior art apparatus, the applicant proposes new claims 22-31. Respectfully, these claims, which restate the invention of prior claims 13-16 in a fashion which is expected to make the examiner more fully appreciate how the prior art of record cannot anticipate or render obvious the applicant's invention (either as previously presented or presently recited), are further submitted to broaden the invention as recited in the prior pending claims (for instance, the applicant substitutes "resilient linkage" for the narrower "pull member").

Turning then to the Hsu reference, the same does not anticipate nor render obvious claims 22-31 because the structural connection between the handle and the jaws in Hsu is rigid, and so does not permit the trigger to be depressed further when a gripped object prevents the jaws from closing further. As an aid to understanding how this is so,

the applicant has inserted three figures from Hsu, with like components sharing the same color scheme in each figure.

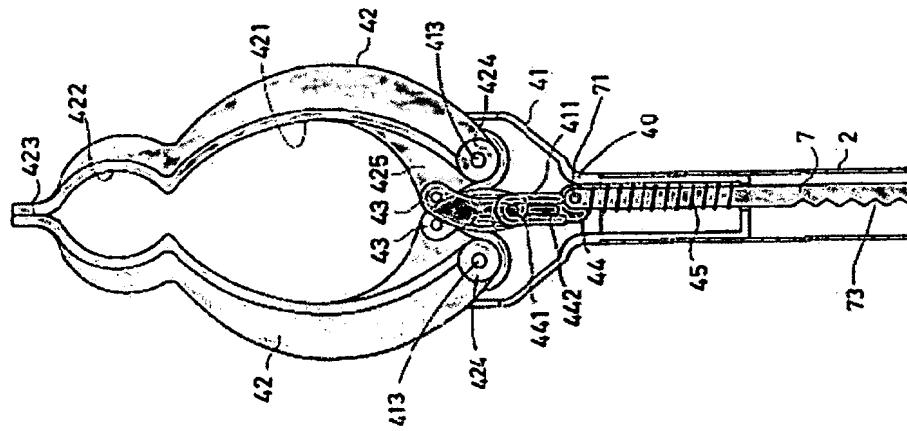


FIG. 12

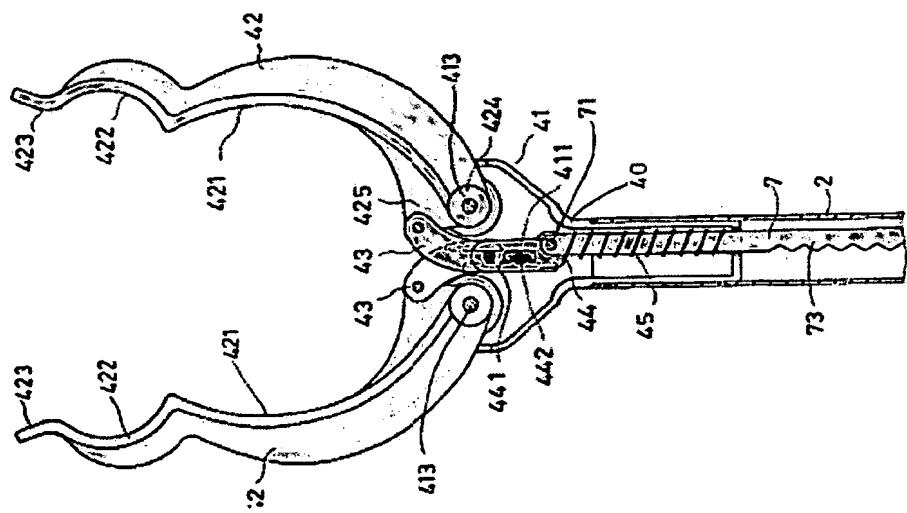


FIG. 11

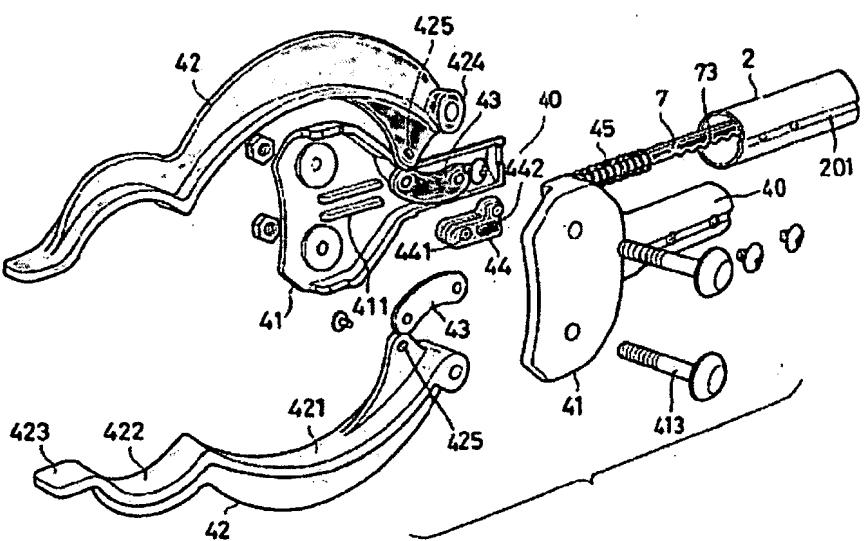


FIG. 10

As can be seen from the above, each jaw 42 (orange or green) pivots about a pivot pole 413. Each jaw 42 is moved about such pole 413 by a linkage mechanism comprised of the following: A **link 43** (yellow or purple). These “links 43 each have a rear end pivotally or rotatably secured to the front end of the **follower 44** . . .” by pin 441 (red) Col. 6, lines 17-18. The follower 44 (blue) has “two ears 442 (black) extended therefrom and slidably engaged in the tracks 411 of the flaps 41 . . .” Col. 6, lines 12-14. The follower 44 is connected to a **beam 7** (orange) “with a fastener 71 or the like” (Col. 6, l. 26) which is, in turn, connected to a handle by a **cable 6** (not shown in Figs. 10, 11 or 12).

In operation, depressing the handle pulls the cable, which in turn moves the beam 7. As the beam slides back, the follower 44 must also slide back, causing the links 43 to slide back and so rotate the jaws 42 closed about pivot poles 413. As beam 7 slides back spring 45 gets compressed by the follower 44. This compression of the spring biases the follower 44 to move forward again if allowed to do so by the beam 7 and the links 43. If the beam slides forward, the follower 44 must also slide forward, causing the links 43 to also slide forward and to rotate the jaws 42 to open about pivot poles 413. But if the handle is fixed in place so that the cable 6 cannot move, then beam 7 cannot move, follower 44 cannot move, links 43 cannot move and jaws 42 cannot rotate about pivot poles 413. In a similar manner, if the jaws 42 cannot move or pivot because they are stopped from doing so by some object captured therebetween, then the links 43 cannot move, which means the follower 44 cannot move and, in turn, the beam 7 cannot move to allow any movement of the cable 6 or the handle assembly.

To summarize, the linkage mechanism of Hsu as described above has no disclosed resiliency. It is an arrangement of rigid parts which serve to close the jaws upon depressing

the handle. Thus, when a solid object is gripped between the jaws, this mechanism will not permit the handle to be further depressed. The spring 45 of the Hsu device does *not* alter this fact. It does *not* comprise part of the linkage mechanism in that it does not serve to effect the movement of the jaws from the fully opened to the fully closed positions thereof upon depressing the handle. Instead, the spring 45 of Hsu, when compressed, merely biases the follower 44 to encourage movement of the jaws back to place when the handle is released.

See Col. 6, lines 32-36 of Hsu.

The applicant wishes to point out that a *prima facie* case of anticipation is made out by the United States Patent Office under 35 U.S.C. § 102 (a) if the invention is described in a "printed publication" whose authorship differs in any way from the inventive entity unless it is stated within the publication itself that the publication is describing the applicant's work. *In re Katz*, 687 F.2d 450 (CCPA 1982) *See also* MPEP §720.02. An anticipating reference must fully disclose each and every element of the claimed invention, arranged as in the claim. *See Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984). The applicant also wishes to point out that a *prima facie* case of obviousness requires a showing that the cited references collectively teach *all* elements of the claimed invention. *See* MPEP §2143.03 (*citing In re Royka* 180 USPQ 580 (CCPA 1974)). The applicant does not believe the examiner has met this burden in that Hsu does *not*, as explained hereinabove, disclose a resilient linkage between the trigger and the jaws that permits the trigger to be moved into a locked position even when a gripped object prevents the jaws from closing further.

In view of the foregoing, the applicant respectfully submits that newly proposed claims 22-31 are patentable over the art of record, taken alone or in any permissible combination.

III. Conclusion

In view of the foregoing, the applicant respectfully submits that the instant application stands in condition for immediate allowance. Of course, the examiner is invited to contact the applicant's undersigned counsel at (734) 662-0270 should he have any questions respecting this paper, or if a further telephone interview might otherwise expedite the prosecution of this case.

Respectfully submitted,

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